



Office of Engineering
Project Development Division
Bridge Design Section
PO Box 94245 | Baton Rouge, LA 70804-9245
Phone: 225-379-1302

Bobby Jindal, Governor
Sherri H. LeBas, P.E., Secretary

MEMORANDUM

TO: ALL CONSULTANTS
ALL BRIDGE DESIGNERS

FROM: PAUL FOSSIER, P.E.
BRIDGE DESIGN ENGINEER ADMINISTRATOR

SUBJECT: BRIDGE DESIGN TECHNICAL MEMORANDUM NO. 63 (BDTM.63)
BORING LOCATION FORMAT FOR BORING LOGS AND BRIDGE PLANS

DATE: June 21, 2016

Boring Logs

Per a memo dated June 1, 2016 (see attachment 1), the Pavement and Geotechnical Section has revised the way in which boring locations are indicated on the boring log sheets. The Station and Offset dimensions will no longer be listed. Boring locations will continue to be shown on the boring logs by means of GPS latitude and longitude coordinates.

Bridge Plans

In order to show the boring locations in the bridge plans, the designer will need to go through a short conversion process using Corpscon, a program provided by the Army Corps of Engineers. Corpscon converts the GPS latitude and longitude coordinates into Louisiana State Plane coordinates, which can then be used to mark the boring location in a survey .dgn using InRoads. The station and offset information can then be determined by taking measurements in Microstation. The instructions for this process are given in attachment 2.

Because the boring information is pertinent to foundation design, the borings are to be shown on the bridge foundation plan. Historically, boring locations have been shown on bridge general plans, so the general plan should include a note stating that boring locations are shown on the foundation plan. If the plan set does not include a foundation plan, then borings are to be shown on the general plan. Borings are to be shown using the boring symbol found in CADconform, and a leader callout with the name of the boring (which coincides with the boring logs) and the station and offset of the boring. See attachment 3 for an example.

This technical memorandum is posted on the LA DOTD Website under *Inside La DOTD > Divisions - Engineering > Bridge Design > Technical Memoranda – BDTMs.*

Please contact Ms. Zhengzheng “Jenny” Fu (225-379-1321, zhengzheng.fu@la.gov) if you have questions or comments.

PF/zzf/abl

Attachments

Cc: Janice Williams (Chief Engineer)
Edward Wedge (Deputy Engineer Administrator)
Chad Winchester (Chief, Project Development Division)

Kirk Gallien (Assistant Secretary of Operations)
David Miller (Chief Maintenance Administrator)
Michael Vosburg (Chief Construction Division Engineer)
Jeff Burst (Project Management Director)
Jeff Lambert (Pavement and Geotechnical Engineer Administrator)
Simone Ardoin (Road Design Engineer Administrator)
Art Aguirre (FHWA)
Francisco Gudiel (Geotechnical and Physical Evaluation Engineer)
Rittirong Charoenpap (Assistant Materials Engineer Administrator)
District Administrators, ADA Engineering, ADA Operations, and District Area Engineers

RECEIVED

BRIDGE DESIGN

REFERRED TO

☐ REFERRED FOR ACTION
☐ ANSWER FOR MY SIGNATURE
☐ FOR FILE
☐ FOR YOUR INFORMATION
☐ FOR SIGNATURE
☐ RETURN TO ME
☐ PLEASE SEE ME
☐ PLEASE TELEPHONE ME
☐ FOR APPROVAL
☐ PLEASE ADVISE ME

BY _____ DATE _____
BY _____ DATE _____
BY _____ DATE _____

TO: MR. PAUL FOSSIER, P.E.
BRIDGE DESIGN ENGINEER ADMINISTRATOR

FROM: JEFFREY R. LAMBERT, P.E.
PAVEMENT AND GEOTECHNICAL ENGINEER ADMINISTRATOR

DATE: June 01, 2016

SUBJECT: LOCATION OF BORINGS ON BORING LOGS

With regard to our meeting on May 16, 2016, this is to formally notify your office that we will no longer list the locations of the borings by giving their Station and Offset on the boring logs. The borings will continue to be located on the boring logs by means of GPS Latitude & Longitude coordinates. The GPS information will then be used by the Design Engineer to locate the boring logs on the Bridge General Plan and Foundation Layout sheets. The station and offset can be calculated based on survey controls shown on the electronic survey.

JRL/JFG:jfq

Cc. Mr. Chad Winchester, P.E.
Mr. Brian Owens, P.E.
Ms. Jenny Fu, P.E.
Mr. Rittirong Charoenpap, P.E., M.B.A.
Mr. Chris Guidry, P.E.
Mr. Chris Nickel, P.E.
Mr. Brandon Johnson El
Mr. Johnny Sanford
Ms. Simone Ardoin, PE
Mr. Jeff Burst. P.E.

RECOMMENDED FOR APPROVAL _____ DATE _____

RECOMMENDED FOR APPROVAL _____ DATE _____

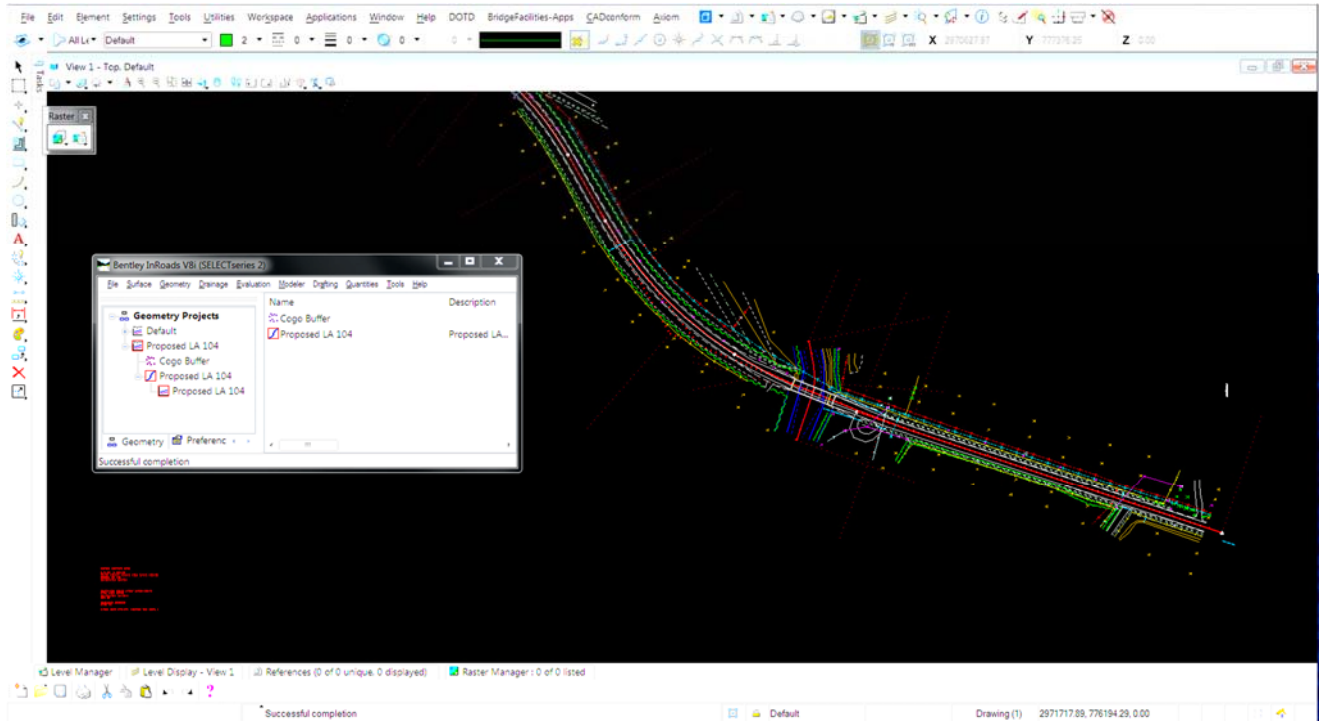
RECOMMENDED FOR APPROVAL _____ DATE _____

APPROVED Jeffrey R. Lambert DATE 6-1-16

BDTM.63 - ATTACHMENT 2

Procedure for using Corpscon and InRoads to convert GPS Latitude and Longitude coordinates into Louisiana State Plane coordinates, in order to place boring locations on a general plan:

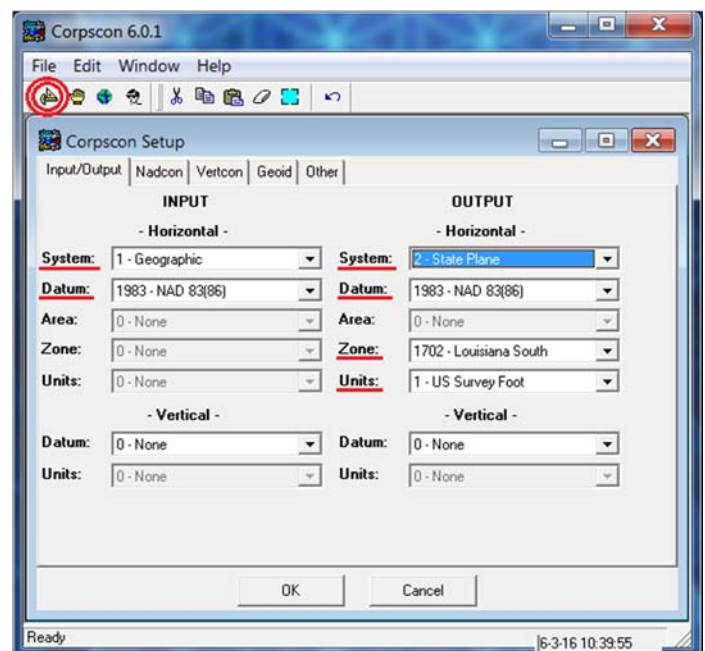
1. Install Corpscon 6. The installation program and a zip file containing program files are provided on the Army Corps of Engineers website: <http://www.agc.army.mil/Missions/Corpscon.aspx>
2. Open the Microstation .dgn survey file, then open InRoads. (Note that this procedure will work in either the 3D or 2D flattened survey file.)



3. Open Corpscon, then use the first icon on the left side of the menu bar to open the Corpscon Setup window.

The Input “System” should be set to “Geographic” (for the geographic latitude and longitude provided on the boring log) and the Input “Datum” should be set to the datum of the collected latitude and longitude coordinates. For current and future projects, this should be the most recent datum provided in the drop-down menu.

Use the survey information given in the survey .dgn file to enter the correct Output information.



The Output “System”, “Datum”, and “Zone” fields must match the information given in the survey file. Projects in Louisiana will either be in Zone “1701 LA North” or “1702 LA South.”

Confirm that the Output “Units” match the units of the survey file. “US Survey Foot” will be typical, but some projects may use “Meter”.

(Note the vertical datum is set to “None” since we are only concerned with the horizontal coordinates of the boring.)

Click “OK”.

```
SURVEY PROJECT NOTE
S.P.NO. H.002101
BAYOU CANNES BRIDGE NEAR VILLE PLATTE
ROUTE: LA 104
EVANGELINE PARISH

LOUISIANA STATE PLANE COORDINATES
ZONE 1702 SOUTH
HORIZONTAL CONTROL
NAD 83

VERTICAL CONTROL
NAVD 88

FIELD BOOK 169-891 (LEVELS AND MISC.)
```

4. Use the second icon from the left on the menu bar to open the Manual Conversion window. Enter the “Point Name” (Boring B-1 in this case) and associated “Latitude” and “Longitude” given on the boring log, then click “Convert”.

(Note that the “Latitude” and “Longitude” must only be entered as positive values.)

This will give you the converted “Northing” and “Easting” coordinates.

Corpscon 6.0.1

File Edit Window Help

Manual Conversion

Point Name: Boring B-1

Latitude: 30.63272

Longitude: 92.31854

Convert

Office: Office Project: Project Remark:

Office
Project
3 June 2016

INPUT
Geographic, NAD83

OUTPUT
State Plane, NAD83
1702 - Louisiana South, U.S. Feet

Boring B-1 2/2

Latitude: 30.63272
Longitude: 92.31854

Northing/Y: 776936.066
Easting/X: 2970966.260

Convergence: -0 29 33.41701
Scale Factor: 0.999986382
Combined Factor: -999.000000000

Remark:

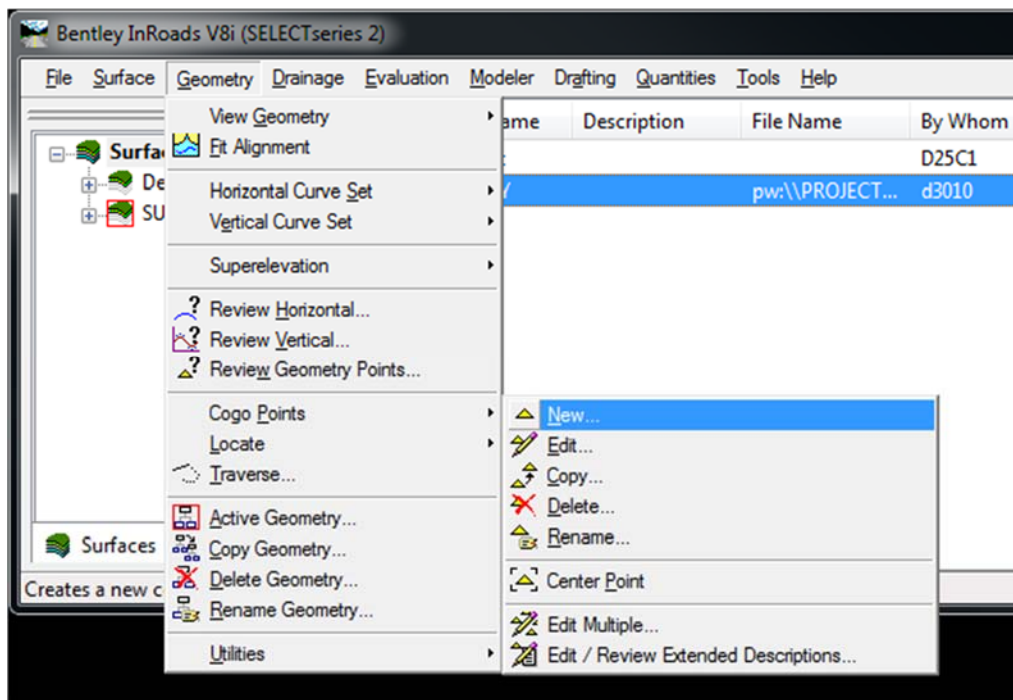
Corpscon v6.0.1, U.S. Army Corps of Engineers

Close

Ready

6-3-16 17:43:52

5. Within InRoads, Select Geometry > Cogo Points > New...



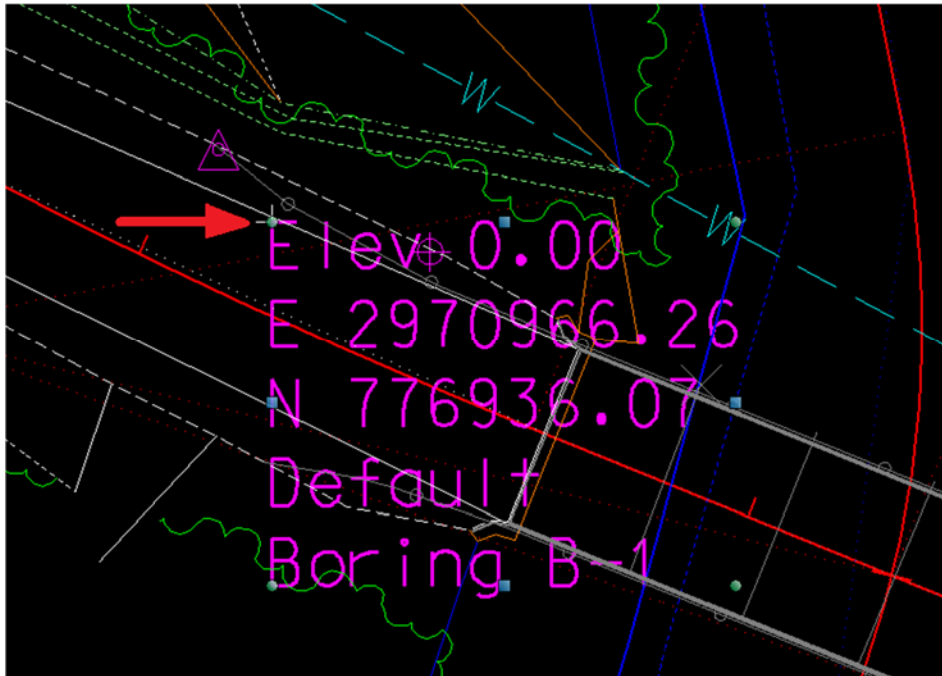
Enter the name of the boring, and the “Northing” and “Easting” information given by Corpscon.

Click “Apply” and a Results window will open. The location of the boring will now be displayed in the correct location in the survey file.

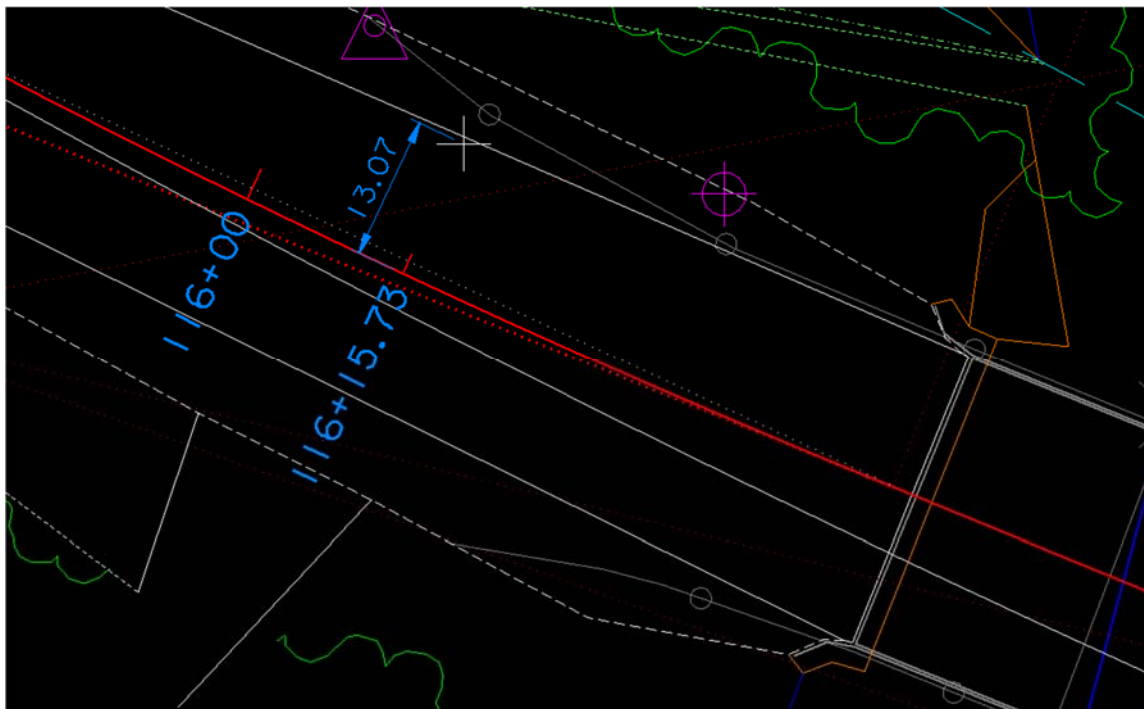
The 'New Cogo Point' dialog box is shown. It contains the following fields and options:

- Define By:** A dropdown menu set to 'Northing/Easting'.
- Name:** A text field containing 'Boring B-1'.
- Northing:** A text field containing '776936.07'.
- Easting:** A text field containing '2970966.26'.
- Elevation:** A text field containing '0.00'.
- Horizontal Alignment:** A dropdown menu set to 'Proposed LA 104'.
- Station:** A text field containing '116+15.82'.
- Offset:** A text field containing '-16.20'.
- Elevation:** A text field containing '0.00'.
- Description:** An empty text field.
- Style:** A dropdown menu set to 'Default'.
- Buttons:** 'Apply', 'Close', and 'Help' buttons are located on the right side.

The boring point is located at the top-left corner of the text and is indicated by a white cross (+).



6. The boring point can be referenced into the general plan, then copied and pasted into place. Measurements can then be taken from the alignment to the boring to determine the Station and Offset of the boring.



7. Note that it is possible to import a list of points and place them into Microstation as a batch, as opposed to placing them one at a time as shown here. This would be useful for projects with a very large list of boring locations. Contact the Bridge Design Standards Manager for instructions on this process.

BDTM.63 – ATTACHMENT 3

Sample of boring locations on foundation plan:

